

IN THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Claims 1-50 (Canceled).

Claim 51 (Currently Amended): A method for screening a candidate ligand molecule ~~that possesses an agonist or an antagonist biological activity on a target receptor of an XQHNPR (SEQ ID NO: 14) peptide~~, comprising:

- a) preparing a biological material comprising ~~a biological material comprising~~ a cell sample or cell homogenate or a tissue sample;
- b) incubating the ~~cell culture, organ specimen, or tissue sample~~ biological material of a) in the presence of (i) $10^{-10} - 10^{-5}$ M of a candidate molecule under conditions suitable for activation of adenylyl cyclase; and
- c) measuring adenylyl cyclase activity present in the biological material of a), respectively, in the presence or in the absence of the candidate ligand molecule and in the presence [[of]] or in the absence of a submaximal concentration of the peptide QHNPR (SEQ ID NO: 1), and
- d) selecting a ligand molecule which increases or decreases adenylyl cyclase activity induced in the biological material of a) by the peptide QHNPR (SEQ ID NO: 1).

Claim 52 (Previously Presented) The method of Claim 51, wherein the biological material in a) is a confluent target cell culture monolayer.

Claim 53 (Previously Presented) The method of Claim 51, wherein the biological material in a) is a target organ specimen.

Claim 54 (Previously Presented) The method of Claim 51, wherein the biological material in a) is a tissue cryosection.

Claim 55 (Previously Presented): The method of Claim 51, wherein the biological material in a) is a tissue slice.

Claim 56 (Previously Presented): The method of Claim 51, wherein the biological material in a) is a cell homogenate.

Claim 57 (Previously Presented): The method of Claim 51, wherein the biological material in a) is a primary cell culture.

Claim 58 (Previously Presented): The method of Claim 51, wherein the biological material in a) is an established cell line.

Claim 59 (Currently Amended) A method for screening a candidate ligand molecule ~~that possesses an agonist or an antagonist biological activity on a target receptor of an XQHNPR (SEQ ID NO: 14) peptide~~, comprising:

- a) culturing an eukaryotic cell capable of synthesizing collagen;

- b) incubating the eukaryotic cell of a) in a beta-glycerophosphate in the presence of $10^{-10} - 10^{-5}$ M of the candidate ligand molecule and in the presence of a submaximal concentration of QHNPR (SEQ ID NO: 1) peptide;
- c) measuring production of a specific metabolite in the presence or in the absence of the candidate ligand molecule and in the presence of in the absence of a submaximal concentration of QHNPR (SEQ ID NO: 1), and
 - d) selecting a ligand molecule which increases or decreases the production of the specific metabolite induced by the QHNPR (SEQ ID NO: 1) peptide.

Claim 60 (Previously Presented) The method of Claim 59, wherein said eukaryotic cell is a mammalian cell that naturally synthesizes collagen.

Claim 61 (Previously Presented) The method of Claim 59, wherein said eukaryotic cell is a cell that has been transfected or transformed with a nucleic acid encoding collagen.

Claim 62 (Previously Presented): The method of Claim 59, wherein the specific metabolite is calcium.

Claim 63 (Previously Presented): The method of Claim 59, wherein the specific metabolite is alkaline phosphatase.

Claim 64 (Previously Presented): The method of Claim 59, wherein the specific metabolite is DNA.

Claim 65 (Currently Amended): A method for screening a candidate ligand molecule ~~that possesses an agonist or an antagonist biological activity on the target receptor of an XQHNPR (SEQ ID NO: 14) peptide~~, comprising:

- a) preparing a biological material comprising a cell sample, cell homogenate or a tissue sample;
- b) incubating the biological material of a) in the presence of $10^{-10} - 10^{-5}$ M of the candidate molecule and in the presence of a submaximal concentration of QHNPR (SEQ ID NO: 1);
- c) measuring a metabolic change, respectively in the presence or in the absence of the candidate ligand molecule and in the presence or in the absence of a submaximal concentration of the peptide QHNPR (SEQ ID NO: 1),
- d) selecting a ligand molecule which increases or decreases the metabolic change induced by the peptide QHNPR (SEQ ID NO: 1).

Claim 66 (Previously Presented) The method of Claim 65, wherein the biological material in a) is a target organ specimen.

Claim 67 (Previously Presented) The method of Claim 65, wherein the biological material in a) is a tissue cryosection.

Claim 68 (Previously Presented) The method of Claim 65, wherein the biological material in a) is a tissue slice.

Claim 69 (Previously Presented): The method of Claim 65, wherein the biological material in a) is a cell homogenate.

Claim 70 (Previously Presented): The method of Claim 65, wherein the biological material in a) is a primary cell culture.

Claim 71 (Previously Presented): The method of Claim 65, wherein the biological material in a) is an established cell line.

Claim 72 (Previously Presented): The method of Claim 65, wherein the metabolic change is measured by an enzyme assay.

Claim 73 (Previously Presented): The method of Claim 65, wherein the metabolic change is measured by an ion transport assay.

Claim 74 (Previously Presented): The method of Claim 65, wherein the metabolic change is measured by a signal transduction assay.

Claim 75 (Previously Presented): A biologically active derivative of the XQHNPR (SEQ ID NO: 14) polypeptide which has been obtained according to the method of Claim 51, provided that said biologically active derivative does not have the following structure: Y-HNP-Z, wherein Y denotes a glutamine (Q), a pyroglutamic acid residue, or a sequence of two aminoacids arginine-glutamine (RQ) and Z represents an OH group or a basic amino acid, the basic amino being Lysine (K) or an Arginine (R) or said biologically active derivative does not have the sequence QHNLR (SEQ ID NO: 1) or RQHNLR (SEQ ID NO: 12).

Claim 76 (Previously Presented): A biologically active derivative of the XQHNPR (SEQ ID NO: 14) polypeptide which has been obtained according to the method of Claim 59, provided that said biologically active derivative does not have the following structure: Y-HNP-Z, wherein Y denotes a glutamine (Q), a pyroglutamic acid residue, or a sequence of two amino acids arginine-glutamine (RQ) and Z represents an OH group or a basic amino acid, the basic amino being Lysine (K) or an Arginine (R) or said biologically active derivative does not have the sequence QHNLR (SEQ ID NO: 1) or RQHNLR (SEQ ID NO: 12).

Claim 77 (Previously Presented): A biologically active derivative of the XQHNPR (SEQ ID NO: 14) polypeptide which has been obtained according to the method of Claim 65, provided that said biologically active derivative does not have the following structure: Y-HNP-Z, wherein Y denotes a glutamine (Q), a pyroglutamic acid residue, or a sequence of two amino acids arginine-glutamine (RQ) and Z represents an OH group or a basic amino acid, the basic amino being Lysine (K) or an Arginine (R) or said biologically active derivative does not have the sequence QHNLR (SEQ ID NO: 1) or RQHNLR (SEQ ID NO: 12).